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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,776	04/05/2001	John Erik Hershey	RD-24,495	1295
41838	7590	05/10/2005	EXAMINER	
GENERAL ELECTRIC COMPANY (PCPI) C/O FLETCHER YODER P. O. BOX 692289 HOUSTON, TX 77269-2289			LUGO, DAVID B	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/825,776

**Applicant(s)**

HERSHEY ET AL.

**Examiner**

David B. Lugo

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive. Regarding claim 8, Applicant argues that Scott '980 does not teach or disclose a colored noise-like preamble. In response, the preamble signal transmitted and received in the system of Scott is broadly considered to be a colored noise-like preamble, as the preamble may appear noise-like when transmitted, and no signal has a completely white power spectral density.
2. Further, it is noted that the claim is an apparatus claim drawn to a system for short range communications comprising a transmitter for performing the function of transmitting a colored noise-like preamble. In accordance with MPEP § 2114, an "apparatus must be distinguished from the prior art in terms of structure rather than function." In order to anticipate the claim, the reference must disclose the claimed structure, which is recited as a transmitter, a receiver, and a signal processor. The Scott '980 reference discloses an apparatus comprising the claimed structure, as described in the previous Office action. Further, the functions of the transmitter and receiver of Scott include transmitting and receiving preamble signals, respectively. Thus, the transmitter and receiver of Scott are considered to be able to transmit and receive colored noise-like preamble signals, as a colored noise-like preamble signal is comprised of a sequence of binary information which is modulated on a carrier, and Scott discloses the capability to transmit a preamble signal which includes a sequence of binary information modulated on a carrier. Accordingly, Scott '989 is considered to anticipate claim 8.
3. Regarding claim 14, Applicant argues that Scott '373 does not teach or disclose a colored noise-like preamble. For reasons similar to those stated above, the preamble transmitted in the

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system of Scott '373 is broadly considered a colored noise-like preamble. In addition, the apparatus is considered to be capable of transmitting and receiving colored noise-like preambles.

4. Further regarding claim 14, Applicant argues that Scott '373 does not disclose a signal processor for combining at least two antenna output signals. Applicant contends that the cited portion of the Scott '373 reference does not correspond with the claimed subject matter.

However, although indicating that a recited portion of the reference in their remarks is from column 48, Applicant has instead mistakenly recited a passage from column 46. It is believed that the passage actually cited in the previous Office action from column 48, lines 55-60 adequately describes that "combining diversity may be used, wherein the receiver selects one or more antenna paths for use by the demodulator." Accordingly, Applicant's arguments presented with respect to selection diversity are moot.

5. The rejections of claims 8-18 are maintained, and are restated below. Newly added claims 19 and 20 are also addressed below.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 8, 11-13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Scott U.S. Patent 5,959,980.

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8. Regarding claim 8, Scott discloses a communication system where a transmitter 907 (Fig. 9) transmits a preamble 579 (Fig. 5C) and is considered capable of transmitting a colored noise-like preamble, a receiver 809 (Fig. 8A) for receiving the preamble, and including an antenna 808, where there is an adjustment interval that permits adjustments to a directional antenna (col. 22, lines 57-63), and the receiver measures the strength of the preamble (col. 29, lines 17-20).

9. Regarding claim 11, the transmitter and receiver are considered capable of transmitting and receiving a colored noise-like preamble composed of interleaved sequences of samples of colored noise.

10. Regarding claims 12 and 13, Scott discloses use of the communication system in air interfaces including the ISM band (col. 48, lines 48-55), and thus, the transmitter and receiver are considered an ISM transmitter and ISM receiver, respectively.

11. Regarding claim 19, Scott discloses a communication system where a transmitter 907 (Fig. 9) transmits a preamble 579 (Fig. 5C), broadly considered a colored noise-like preamble, the transmitter capable of transmitting a colored noise-like preamble, a receiver 809 (Fig. 8A) for receiving the preamble, and including an antenna 808, where the receiver determines, in response to the strength of the preamble, the direction or distance of a user station (col. 29, lines 12-20), and based on the determined direction or distance made in response to the strength of the preamble, the receiver may adjust its antenna to direct it towards the user station during an antenna adjustment interval (col. 29, lines 21-24).

12. Claims 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Scott U.S. Patent 6,141,373.

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13. Regarding claim 14, Scott teaches a communications system (Fig. 1) where a transmitter sends a preamble 901 (Fig. 9) to a receiver, the transmitter considered capable of transmitting a colored noise-like preamble, and the receiver receives the preamble and is disclosed as performing diversity combining, where a function of the transmitted preamble code is used to allow multiple antenna paths for use by a demodulator (col. 48, lines 55-60).

14. Regarding claims 15 and 16, the diversity combining is considered to be used to mitigate interfering signals and enhance reception of the preamble.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott U.S. Patent 5,959,980 in view of Keen U.S. Patent 4,388,723.

17. Regarding claim 9, Scott discloses a communication system as described above, but does not disclose that the antenna pattern comprises a spatial null adapted to be oriented electronically.

18. Keen disclose the use an antenna pattern that produces a spatial null, which may be determined electrically (col. 2, lines 58-64).

19. It would have been obvious to one of ordinary skill in the art to employ an antenna pattern that produce a spatial null in the system of Scott as such antennas produce a very large rejection of unwanted signals (col. 2, lines 61-62).

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20. Regarding claim 20, Scott discloses a communication system as described above, where an antenna is adjusted based on preamble strength, but does not expressly disclose that the antenna pattern comprises a spatial null adapted to be oriented electronically.

21. Keen disclose the use an antenna pattern that produces a spatial null, which may be determined electrically (col. 2, lines 58-64).

22. It would have been obvious to one of ordinary skill in the art to employ an antenna pattern that produce a spatial null in the system of Scott as such antennas produce a very large rejection of unwanted signals (col. 2, lines 61-62).

23. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott U.S. Patent 5,959,980 in view of Bunch et al. U.S. Patent 4,121,216.

24. Regarding claim 10, Scott discloses a communication system as described above, but does not disclose that the processor is adapted to implement an arc sine law.

25. Bunch et al. disclose an "ARC SIN" converter that produces a true bearing angle signal (col. 8, lines 13-15).

26. It would have been obvious to one of ordinary skill in the art to adapt the processor to implement an arc sine law in order to produce a true bearing angle signal for aid in adjusting the direction of the antenna.

27. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott U.S. Patent 6,141,373 in view of Scott U.S. Patent 5,959,980.

28. Regarding claims 17 and 18, Scott '373 discloses a communication system as disclosed above, but does not expressly disclose use of the system in an ISM system.

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29. Scott '980 discloses use of a communication system in air interfaces including the ISM band (col. 48, lines 48-55), where the transmitters and receivers are considered ISM transmitters and ISM receivers, respectively.

30. It would have been obvious to one of ordinary skill in the art to use the system of Scott '373 in air interfaces including the ISM band since this band is unregulated and therefore avoids the costly need to acquire and license spectrum.

*Allowable Subject Matter*

31. Claims 1-7 are allowed.

32. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach a transmission unit comprising a noise source for generating a noise signal, a signal generator connected to the noise source for generating a preamble from the noise signal, a switching device having a first input connected to a modulator that modulates the preamble, and a second input connected to an ISM spread spectrum modulator that provides an ISM transmission signal, where the transmitter outputs the generated colored noise-like preamble followed by the ISM transmission signal according to a position of the switching device.

*Conclusion*

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**



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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo  
5/4/05

  
KHAI TRAN  
PRIMARY EXAMINER 5/5/05